

76020

Cruise Report  
R/V FAY 017  
June 20-29, 1976  
U.S. Geological Survey

ROSCOP  
5 OCT 76

William P. Dillon, USGS

1. Ship  
R/V H.J.W. FAY  
Captain James P. Olander
2. Cruise  
017
3. Area  
shelf and inner Blake Plateau off  
Florida, Georgia, South Carolina  
and North Carolina
4. Dates and Ports  
20-29 June 1976 from Fort Lauderdale,  
FL, to Charleston, S.C.
5. Personnel  
Chief Scientist  
William Dillon  
  
Seismic watch standers  
0-4 Deborah Hutchinson  
Alan-Jon Zupan (South Carolina  
Geological Survey)  
  
4-8 Caroline Morse  
Douglas Edsall  
  
8-12 Elizabeth Winget  
John Redman (Bureau of Land  
Management)  
  
Seismic system technicians  
Frank Jennings  
Felicity Oram  
  
Navigation-gravity group  
Perry Parks  
Donald Moller  
Prescott Heald (4-8)  
Charles Paul (8-12)  
(cruise curator)  
Paul Berezna (Western  
Geophysical) (0-4)  
  
6. Objective  
Geophysical reconnaissance of S.E.  
Georgia Embayment

## 7. Equipment

Western Geophysical integrated navigation system

Seismic reflection profiling systems

- airgun system (20, 40, 80, 160 in<sup>3</sup> guns)
- 600 joule sparker (Del Norte)
- 3.5 KHz transducer profiler

Gravimeter (vibrating string type)

Magnetometer and magnetic gradiometer  
(proton precession type)

## 8. Navigation

Western Geophysical integrated navigation system included:

- a) LORAN C (rho-rho mode ) receiver
- b) satellite navigation receiver
- c) Sperry MK 29 gyrocompass
- d) speed log
- e) cesium vapor time standard  
annotated in GMT - time zone +4

## 9. Data Acquired

- a) Sparker high resolution profiles
- b) Single channel airgun profiles
- c) 3.5 KHz profiles
- d) magnetic intensity and gradient
- e) gravity

## 10. Narrative

FAY sailed from Fort Lauderdale at noon on 20 June 1976, four days late. All systems began operation at 0800, 21 June and continued throughout the cruise until shut down at 0800, 29 June. During these nine operating days, very little time was lost in breakdowns and maintenance. One tie line was run along the shelf from Daytona Beach to Cape Fear then eight cross shelf lines were obtained between Cape Fear and Charleston spaced about 30 km apart.



These lines were about 160 km. long, extending from shallow water (about 10 meters) to 600 meters water depth on the inner Blake Plateau. Average operating speed was about 6.5 knots. Due to the loss of 4 days operating time, the survey of a possibly active fault on the outer edge of the Blake Plateau, unfortunately, has had to be postponed until the Fall. The relatively high operating speed, in part due to the generally excellent weather, allowed us to make up some of the lost time.

The sparker system produced excellent high resolution records and the airgun system was adjusted for a relatively high frequency bandpass (32-205Hz) to improve resolution. No apparent loss of penetration could be noted with this high airgun bandpass. It was found that addition of the 160 in<sup>3</sup> gun to the three small guns did not appear to change gun signature but did increase power, so the four guns were run together for the remainder of the cruise.

One unfortunate accident occurred. As Felicity Oram was beginning to bleed a compressor, one of the safety valves near her popped open explosively. The noise caused some temporary ear damage with pain and hearing loss. When the pain continued overnight we ran into Charleston harbor in order to have Felicity removed by the U.S. Coast Guard for medical attention. The cause of the accident was not related to any error on her part, but rather apparently due to a sticky safety valve. It is apparent that ear protection should be worn when working near the compressors. As we had a relatively large navigation-gravity group aboard, Scott Heald took over much of Felicity's assignments and Perry Parks and Don Moller took over one of Scott's watches.

The Fay was an exceptionally well run, well maintained ship under Captain Olander and Chief Engineer Weeks, and we received excellent cooperation throughout the cruise from all the officers and crew members. Except for the lost time and Felicity's accident, the cruise was completely successful.

- 11. a) days at sea - 10
- b) working days - 9
- c) total ships track - 2600km
- d) seismic profile and magnetics - 2000km
- gravity - 2600km
- e) no stations
- f) no samples

12. Cruise track attached



